6,028,910 to Kirchner *et al.* The Kirchner reference, however, differs from the claimed invention in a number of respects.

In Kirchner, the apparatus takes a series of images, each image including a number of regions of interest. The images are then detected one at a time. From Figure 4, it is clear that at any one given time, only one image is detected, depending on the position of the source relative to the position of the detector and/or the position of the test specimen. In contrast, the claimed invention acquires a plurality of images simultaneously, i.e., at any particular instant in time. To clarify this difference between the claimed invention and Kirchner, independent claim 1 has been amended to require a X-ray detector located to simultaneously receive portions of the beam that have passed through the subset of the plurality of regions of interest, the X-ray detector producing from the received portions of the beam a plurality of discrete images, each of the plurality of discrete images being associated with a region of interest in the subset of the plurality of regions of interest. Similarly, independent claim 13 has been amended to require the step of simultaneously detecting the portion of the beam for the plurality of regions of interest and producing a plurality of discrete image data, each of said plurality of discrete image data corresponding to each of the regions of interest. Kirchner does not disclose these limitations of claims 1 and 13 and therefore cannot anticipate the invention set forth in these independent claims.

Kirchner further differs from the claimed invention in that it does not teach an off-center inspection system. See Figure 4. In contrast, the claimed invention provides an X-ray inspection system using a tomosynthesis technique that does not require the centerline of the X-ray focal spot position and the field of view at the detector to be coincident with

the center of the object to be imaged. The advantages of such an off-centered inspection system are discussed in the Summary of the Invention.

In the instant application, both independent claims 31 and 34 require the step of "producing electronic representations of acquired off-axis images corresponding to the regions of interest." Kirchner clearly does not meet that limitation. Thus, for this further reason, Kirchner does not anticipate the invention of claims 31 and 34.

For all the reasons provided above, Applicants respectfully request that the rejection under 35 U.S.C. § 102 (e) of claims 1, 13, 31, and 34, and all claims dependent thereon, be withdrawn and the claims passed to issue.

In Paragraph 3, claims 16-18 and 21-25 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,926,452 to Baker *et al.* Similarly, in paragraph 4, claims 26-28 and 34 were rejected as being anticipated by Baker. The Baker reference, however, does not teach every limitation of independent claims 16 and 26 and therefore cannot anticipate these claims.

Claim 16 is directed to an apparatus for acquiring off-axis X-ray images of a plurality of regions of interest, the apparatus including a non-steerable source of radiation that produces a beam. The Baker reference, however, discloses a steerable source of radiation. See, for example, figure 1 and col. 10, section entitled "Rotating X-Ray Source." Thus, for this reason, the Baker reference cannot anticipate independent claim 16 and claims 17-25, which are dependent thereon.

Claim 26 is directed to an apparatus for acquiring off-axis X-ray images of test objects, the apparatus includes a high resolution detector that produces electronic representations of acquired off-axis images corresponding to the regions of interest. As

can be appreciated from Figure 3, the apparatus of claim 26 acquires images of points of interest of a test object that are off-center. The advantages of such an arrangement are discussed in the Summary of the Invention.

In contrast, in the Baker reference, the center of the region of interest coincides with a line extending from the center of the path of the X-ray source to the center of the detector. As can be seen in Figure 1 of the Baker reference, the center of object 10 coincides with the centerline of X-ray beams 50 and the center of the field of view of detector 30. Thus, the images acquired with the apparatus of the Baker reference are not off-axis, as required by claim 26. Thus, for this reason, the Baker reference cannot anticipate independent claim 26 and claims 27-30, which are dependent thereon.

For all the reasons provided above, Applicants respectfully request that the rejection under 35 U.S.C. § 102 (b) of claims 16 and 26, and all claims dependent thereon, be withdrawn and the claims passed to issue.

If for any reason the application is not considered to be in condition for allowance, the Examiner is requested to contact the undersigned at 312.935.2366.

Respectfully submitted,

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APPENDIX

In the claims

1. An apparatus for acquiring off-axis X-ray images of a plurality of regions of interest, comprising:

a source of radiation, the source producing a beam of radiation;

a surface to support at least a subset of the plurality of regions of interest; and

a X-ray detector located to simultaneously receive portions of the beam that have passed through the subset of the plurality of regions of interest, the X-ray detector producing from the received portions of the beam [an electronic representation of] a[n] plurality of discrete images, [for] each of the plurality of discrete images being associated with a region of interest in the subset of the plurality of regions of interest;

wherein at least one of the source, the surface, and the detector may be moveable to position the regions of interest within the beam.

13. A method for acquiring off-axis X-ray image data for a plurality of regions of interest, comprising the steps of

locating the plurality of regions of interest within a beam of radiation, at least a portion of the beam passing through the regions of interest;

simultaneously detecting the portion of the beam for the plurality of regions of interest and producing a plurality of discrete image data, each of said plurality of discrete image data corresponding to each of the regions of interest;

adjusting the location of the plurality of regions of interest, at least a subset of the plurality of regions of interest remaining within the beam;

repeating the step of simultaneously detecting and producing image data; and

combining image data for at least one region of interest to generate a tomosynthetic image of the region of interest.